

OBITUARY OF PROFESSOR A. E. BOYCOTT, F.R.S.

With the death of Arthur Edwin Boycott on 12th May Science lost an outstanding man distinguished both as a pathologist and a naturalist, and the many who knew him lost a valued and greatly respected friend ever ready to help anyone, however undistinguished, who was genuinely seeking the advancement of knowledge.

Boycott was born at Hereford in 1877 where he received his early education at the Cathedral School. From this he entered Oriel College, Oxford, with an open classical scholarship in 1894. During the first part of his university career he continued his classical studies, gaining a first class in Classical Moderations. Then he turned to medicine and graduated with first class honours in Natural Science. He completed his medical course at St. Thomas's Hospital, London, and graduated M.B. (Oxon) in 1902. Research was his chosen line and in the next year he was appointed to a subsidiary lectureship at Guy's Hospital, London, and elected to a fellowship at Brasenose College, Oxford. In 1904 he went to the Lister Institute and three years later was recalled to Guy's. In 1912 he was appointed to the chair of pathology at Manchester, but in 1915 he returned to London to occupy the Graham chair of pathology at University College, where he remained till continued ill-health led him to resign in 1935. Of his contributions to pathology this is not the place to speak in detail, but their importance was recognized by his election to the Royal Society in 1914 at the age of 37.

The deep interest in land and freshwater snails which was to last his lifetime had early taken root. At the age of 15 Boycott published his first paper containing a list of the species to be found in Herefordshire. During the next 46 years there appeared from his pen a long series of notes and papers which revealed the exceptional qualities of his mind and invariably shed new light on the many problems he attacked. His scholarly outlook and nice sense of words gave his style a lucidity, literary charm and precision often sadly lacking in scientific communications. His interest was directed mainly to the properties of the living organism in its natural surroundings; and, though sometimes dogmatic and even difficult in the affairs of men, he faced nature with the wondering humility of the true naturalist.

It is difficult to assess the total contribution of a man whose interest was so wide and whose capacity for work was so unbounded, but it is possible to consider his influence on each of five fields of enquiry: general studies, biometry, genetics, ecology, and geographical distribution. Under the first head may be included a number of notes often on little understood or closely related species and dealing with variation, anatomy, sexual differences, habits, or pathology, but each contributing new facts, clearing up old difficulties, or correcting misapprehensions. In this field of minor problems striking advances are not to be expected, but it is the general effect on contemporary work and thought that is of importance; and these notes are but a partial crystallization of the wide and stimulating influence he exerted and the wise counsel he gave to all who came in contact with his work or sought his guidance. He was impressed with the value of the work of local natural history societies and other amateur bodies, and always ready to do anything to further their efforts. It was in this spirit that Boycott sought to spread knowledge of the use of statistical and biometrical methods, and in his presidential address to the Malacological Society of London gave with his usual lucidity a statement for the plain man on practical conchometry. Here, again, the study of snails gained much not only from Boycott's own enquiries but from those he encouraged other workers to undertake.

It is in the field of genetics that Boycott's name has become most widely known to general biologists. When, in a pond near Leeds, he came across a natural population of *Limnaea peregra* which contained a proportion of sinistrals far higher than chance abnormality would suggest, he at once recognized that here was an excellent problem to which genetical analysis might be applied. In 1920 he brought back four sinistrals for breeding. These original parents formed the basis of the enormous stock, amounting in some ten years to about 1,000,000 snails, from which the now classical conclusions were drawn. His results in the first two years showed that the inheritance of sinistrality was no simple problem and that large scale breeding was essential. He appealed for collaborators and, being the man he was, obtained an immediate response. During the next eight years he controlled and

himself bore most of the labor—the annual counting of thousands of trays full of minute young *Limnaea*—of this vast experiment. This work was undertaken in addition to what most men would have regarded as a full life, his professorial duties and his editorship of the Journal of Pathology, not to mention his general molluscan interests and other experiments such as that on *Hydrobia jenkinsi*. It is hardly surprising that he had little time for rest, and the strain of these years undoubtedly told on his health; but he was as incapable of sparing himself as he was of departing from the high principles that governed his scientific outlook and dictated his behavior. When his work on sinistrality was closing down, he began experiments on the shell shape that characterizes different natural populations of *L. peregra*. He had a number of different strains in culture, some of which were carried to the sixth generation. This work was continued after his retirement and throughout his last illness. The paper embodying its results, now in the press, was only completed a few days before his death.

From his earliest studies in Herefordshire (1896–7) to his detailed survey of the parish of Aldenham in Herefordshire on which the last paper was published in 1929, Boycott had been steadily amassing a wealth of information about where snails live. This knowledge he summarized in two masterly papers (one of which was based on his presidential address to the British Ecological Society) which firmly laid the foundations of molluscan ecology. For these publications ecologists concerned with land and freshwater snails owe Boycott a debt which they can only repay by carrying on the work he loved and trying to maintain the exceptionally high standards he set. In this field, as in genetics, his contributions to knowledge stand in print to form a fitting monument to his endeavor; but his equally important work on distribution carried out as recorder to the Conchological Society of Great Britain and Ireland—a duty undertaken on Roebuck's death in 1919 and continued till his own death—is known only to a smaller circle. Working on the material that Roebuck had collected, he produced in 1921 an edition of the Society's census of land and freshwater mollusca which is a model for all future work of its kind for whatever group of organisms. It is a great loss that he did not live to complete a revised edition based on his own years of work as recorder.

As a man, Boycott's strong personality, hatred of shams, and uncompromising adherence to his principles, sometimes made him appear stern to those who did not understand him; but to his friends he firmly endeared himself by his deep sincerity, integrity and great personal charm. Whether as a collaborator in the laboratory or as a companion in the field, where perhaps he was in his happiest vein, his lively interest, delicate humor, and unconventional behavior, made even the most tiresome drudgery a pleasant occupation. Out of such men comes not only the advance of knowledge but a hope for the future of humanity.

CAPT. CYRIL DIVER

NOTES AND NEWS

PHYSA ON THE CALIFORNIA ISLANDS.—In the Smithsonian Report for 1877, p. 317, Dr. Stephen Bowers has an account of the Pleistocene of Santa Rosa Island, based on the work of Dr. L. A. Yates. He says: "near the mouth of Soledad Canyon there is a fine exposure of strata consisting of about 90 feet of post-Pliocene deposits, containing fossil bones of vertebrates and at one place fossil *Physa*, at a depth of some 75 feet below the surface." In 1890, Yates recorded *Physa d'orbignyana* Lea from Santa Rosa Island. *P. d'orbignyana*, described from Monterey, California, is a synonym of *P. virgata* Gould, according to Pilsbry and Ferriss. In 1938, I found *Physa* on San Nicolas and Santa Catalina Islands, and all the specimens have been found by Mr. W. J. Clench to be *P. virgata* Gould; he has kindly compared them with Gould's types, and the determination is unquestioned. The specimens on San Nicolas were found in a spring close to the sea, along with a new species of Isopod (*Exosphaeroma*), which is being described by W. G. Van Name. Those from Santa Catalina were obtained from an artificial water-lily pond in the garden of Carl W. Carson, in the middle of Avalon. On the water-lily leaves were many *Helix aspersa*, and the slugs *Limax arborum* (*marginatus* auctt.) and *L. flavus*, these three being of course European species introduced. I visited Echo Lake, said to be the only natural lake on Sta. Catalina, but found no mollusca, only tadpoles and *Notonecta*.—T. D. A. COCKERELL.